

PATENTS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Ward

Examiner: Kim

Serial No.: 10/768,263

Group Art Unit: 3752

Filed January 30, 2004

For: Mechanically Sealed Adjustable Gas Nozzle

**APPEAL BRIEF**

Commissioner of Patents and Trademarks  
P. O. Box 1450  
Alexandria, Virginia 22313-1450

Sir:

Further to the Notice of Appeal filed January 25, 2008, which was accompanied with the statutory fee of \$510, the \$510 fee for the submission of an appeal brief is enclosed herewith. Please charge any additional fee or credit any overpayment to Deposit Account No. 13-3403. Three copies of this page are attached for this purpose.

**I. PRESENTATION OF THE APPEAL**

**A. Real Party in Interest**

The real party in interest is Appellants' assignee, Burner Systems International, Inc., a Delaware Corporation with its principal place of business at 3600 Cummings Road; Chattanooga, TN 37419.

**B. Related Appeals and Interferences**

There are no related appeals and interferences.

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### **C. Status of Claims**

At the time of the final Office Action, claims 1-3, 5-9, 11-14 and 16-20 were pending in the application. The application was initially filed with 16 claims. Claims 1 and 7 were amended on February 22, 2005. Claim 1 was amended again on August 18, 2005. Claims 1 and 6 were amended on January 31, 2006. Claim 1 was amended on June 29, 2006 with the filing of a Request for Continued Examination. Claims 1, 5, 7 11 and 16 were amended with an Amendment and Response filed November 27, 2006. New claims 17-20 were also presented at that time. Claim 1 was amended with a response filed August 2, 2007. Claim 1 was once again amended on October 8, 2007 with the filing of a Second Request for Continued Examination and claims 4, 10 and 15 were cancelled with that amendment. Claim 1 was amended with a response filed January 28, 2007 which reflects how the claims of this application now stand.

A copy of the claims subject to this appeal appears in Appendix A.

### **D. Status of Amendments**

No proposed amendments have been proposed or entered after final.

### **E. Summary of Invention reflecting at least the Independent Claims**

Most generally, the present invention provided by Claim 1 relates to an adjustable gas nozzle **10** having a conduit for receiving gas from a source, a nozzle body member **14** for supplying a jet of gas to the burner section of an appliance, and a flow adjusting member **16**. (Page 4, lines 5-8). The nozzle body member **14** has an elongated gas passageway with a threaded inlet opening at a first end **22** (Page 4, lines 9-10) and a coaxial outlet **28** at a second end. (Page 4, line 12). The conduit **12** is theadedly connected to the nozzle body member **14**. (Page 6, lines 18-19).

The flow adjusting member **16** has a first passageway extending therethrough (Page 4, lines 16-17) and is disposed intermediate the conduit **12** and the nozzle body **14** (Figure 1, Page 4, lines 10-12 and 17-18). A first end **32** has a first restricted orifice or outlet **36** disposed proximate to the first end of the nozzle body member **14** (Figure 1, Page 4, lines 21-22). Second orifice or outlet is at a second end (Figure 1). First or longitudinal passageway or first passageway provides fluid communication through the flow adjusting member **16** through the first and second orifices (Figure 1, Page 4, lines 16-17).

Coupling in the form of threads intermediate the body member **14** and conduit **12** allow for first and second positions (Page 5, lines 11-18, Claim 1 as originally filed).

By-pass passageway **46** provides a flow path around the first orifice and the first passageway in the second position. (Figure 1 and Page 5, lines 17-18). When in said first position, cooperating surfaces (exterior conical surface **32** and internal conical surface **30**) seal between the body member and the adjusting member to close off flow through the by-pass passageway **46**. (Page 5, lines 11-14, Figure 1). The first restricted orifice **32** regulates flow rate when in the first position with gas flowing through the first restricted orifice **32** and the second orifice in series through the longitudinal passageway. (Page 5, line 21- Page 6, line 1).

Cooperating means are associated with the adjusting member and the conduit **12** upstream of the cooperating surfaces for limiting displacement of the nozzle body member relative to the conduit in the first position (Claim 1 as originally filed, Figure 1 illustrated at the contact of the nozzle body member **14** with the conduit **14** at end **25**). The nozzle body member is moveable into a second position relative to the conduit which

relieves the seal between the body member and the adjusting member permitting a second flow of gas through the combination of the first restricted orifice and the by-pass passageway wherein flow through the by-pass passageway does not flow through the first passageway (Page 5, lines 15-21).

A seal distinct of the coupling provided between the conduit and nozzle body member integral to the conduit is also provided to preclude leakage of gas therebetween in both the first and second position which is illustrated as ribs or ridges **50,52** in the preferred embodiment (Page 6, lines 4-22).

Claim 17 is similar to claim 1 except that it lacks some elements claimed in claim 1, but it does provide for a non-adjustable restricted first restricted orifice which is indicated by lead line **36** in Figure 2.

#### **F. Grounds of Rejection to be Reviewed on Appeal**

1. Whether the Examiner properly rejected claims 1, 3, 5-7, 9, 11, 12, 16 and 17 as being anticipated by Hinchman, U.S. Patent No. 2,517,877 (hereinafter "Hinchman").

2. Whether the Examiner properly rejected claims 1, 3, 5-9, 11-14 and 16-20 as being obvious over Ridenour, U.S. Patent No. 5,025,990 (hereinafter "Ridenour") in view of Ito, U.S. Patent No. 4,432,496 (hereinafter "Ito") in the Final Office Action.

3. Whether the Examiner properly rejected claims 1-3, 5-9, 11-14, and 16-20 as being obvious over Ridenour, U.S. Patent No. 5,025,990 (hereinafter "Ridenour") in view of Hollinshead, et al., U.S. Patent No. 4,095,749 (hereinafter "Hollinshead") in the Final Office Action.

## **II. ARGUMENT**

### **A. Anticipation Rejection of Claims 1, 3, 5-7, 9, 11, 12, 16 and 17**

#### **1. Rejection of Claims 1**

Hinchman was argued by the Final Office action to provide an adjustable gas nozzle having a nozzle body member 8, a conduit 7; and a adjusting member 25 and 26. The applicant would agree with this characterization of Hinchman, but this is about where agreement appears to end as it relates to the structure identified by the Office Action which could correlate to claim limitations.

The Final Office Action states that Hinchman has a first restricted orifice (orifice of 29 upstream of 27) at first end 25. First, element 25 in Hinchman is not a first end, but represents sleeve 25. Second, element 29 is defined as sleeve bore 29. An intermediate portion of a bore 29 as referenced by the Final Office Action is not an orifice at an end as claimed.

The Office Action refers to element 26 as a second end and element 33 as a second orifice. Element 26 in Hinchman is the “adjusting member 26” and not a second end, and element 33 is a “bore 33” of the adjusting member 26, and not an orifice.

The Applicant would agree that the Examiner correctly identifies that bores 29,33 can provide a passageway, threaded socket 16 assists in providing a coupling, and 19 and *sic.* 28 (not 27 which is identified in Hinchman as a slit) are cooperating surfaces. However 18 cannot be a by-pass passageway as it cannot meet the limitations of the claim.

Specifically, there is no position of the device shown or described in the Hinchman structure in which gas may pass through bore 18 without going through the first passageway which the Office Action equates to elements 29 and 33.

By identifying seat 15 as a seal, the Office Action effectively acknowledges that gas cannot flow in the identified structure equated as a bypass. In responding to the Applicant pointing this out in November 2006, the Office Action responds that “Hinchman does not disclose by-pass passage 18 as being sealed”. The Applicant would respond by observing that Hinchman does not disclose that the bore 18 provides fluid communication and it is believed that it cannot provide fluid communication. The Applicant and the Examiner apparently have polar opposite opinions as to the operation of the Hinchman reference and the Board’s assistance should prove invaluable.

The Applicant would propose that there are only a few ways in which gas of any kind can get into bore 18. First it could leak into bore 18 past shoulder 14, threaded socket 16 and seat 15. However, this connection is described by Hinchman as a “gas tight joint” (Col. 2, lines 15-16).

Second, gas could pass through passageway 29, 33 and go back upstream past head 31. However, Claim 1 explicitly prohibits such an interpretation since gas through the by-pass passageway cannot proceed through the first passageway (which was equated to passageway 29,33 by the Office Action).

Finally, the Office Action appears to argue that gas could leak past threaded connection 12,30 proceeding from bore 11 past connection of threads 12,30 past lock nut 32 and into bore 18. In order to achieve such a construction (which is not suggested or described in the Hinchman reference), one would need to ignore the Hinchman

specification which explicitly requires at the bottom of Col. 2, line 53-Col. 3, line 1 for the lock nut **32** to be “screwed down **tight** against the seat **15**”(emphasis added). This appears to be a similar mechanical connection that created the “gas tight joint” of the head section **8** to the body section **7**. This connection created by the tightening of the lock nut **32** against the seat **15** would force the threads **30** securely against threads **12** or the internal threads of the nut **32** with the face of the nut against the seat **15** being “tight” against the seat **15**. There are eleven revolutions of threads **30** against threads **12** and four revolutions of threads **30** against the internal thread of the nut **32** shown in Figure 1. With a lock nut **32** installed to be “tight”, it is difficult to envision a scenario where this would not be a gas tight joint, and if gas leakage were to be anticipated from such a connection, the Applicant would expect that Hinchman would have described such a gas flow.

Furthermore, the proposed construction interpretation would appear to render the purpose of the regulator **24** of Hinchman unsuitable for its stated purpose as apparently regardless of the position of the sleeve **25** against the seat **19**, the same pressure and flow would appear to be provided to the hole **23** as would, based on the Examiner’s interpretation of Hinchman, be compensated through a “bypass nature” of bore **18** under such an interpretation. The Applicant simply believes bore **18** cannot meet the limitations of the claimed by-pass.

The Applicant respectfully disagrees with the Examiner’s argument based on the same reference relied upon by the Examiner. The Applicant believes that the Examiner’s proposed construction renders the Hinchman unusable for its intended purpose and requires an interpretation which would change the principle of operation of the Hinchman

regulated flow nozzle. Specifically: “adjusting member **26** will engage the inner end of the sleeve and force the latter outwardly so that the conical end **28** will slide along the cone shaped seat **19** a predetermined distance which will regulate the size of the sleeve bore at the other end, and thus the regulated flow.” (Col. 3, lines 3-8).

Allowance of claim 1 is respectfully requested since the cited reference is believed not only to not anticipate, but also appears to teach away from the claimed construction.

As an additional basis of allowance bore **29** as relied on by the Office Action as the first restricted orifice is not at an end of the adjusting member as required by Claim 1. Claim 1 is believed to be separately allowable on this basis.

Allowance of claim 1 is respectfully requested.

## **2. Rejection of Claims 3 and 5**

Claim 3 requires the additional limitation of material of one of the conduit and body member to be harder than the other. No corresponding element from Hinchman was provided in the Office Actions. MPEP 2131.01 requires that in order to anticipate a claim, the reference must teach every element of the claim citing Verdegall Bros v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

When this was argued in response to an earlier Office Action, the response the Applicant received was:

Applicant asserts that only claim 1 appears to have been analyzed by the Office Action. Applicant is mistaken. Due to the time allotted for examination, the Examiner is unable to reproduce all the claims and address each and every limitation. The Examiner has identified the major element of the claimed invention and assumed that applicant has identified the major elements of the claimed invention and assumed that the applicant, as one of ordinary skill in the art is able to read the references for himself.”



The Applicant has filed two Requests for Continued Examination, and now a formal appeal, and still NONE of the elements other than those of claim 1 and possibly 17 appear to have been identified in any Office Action.

The Applicant has re-read Hinchman several times and studied the Figures. Hinchman does not appear to describe any difference in material construction of the component parts. The Applicant, in the preferred embodiment described in paragraph [00015] on page 6 is pretty clear as to the advantage of such a construction which is not taught or suggested by Hinchman.

Claim 3 depends from claim 1 and is believed to be allowable on the rationale as provided above and is also believed to be separately allowable on this separate basis. Allowance of claim 3 is respectfully requested.

Claim 5 depends from claim 3 and can stand or fall with claim 3 for the purposes of this appeal.

### **3. Rejection of Claim 6**

Claim 6 requires the additional limitation of material of the first restricted orifice being smaller than the outlet of the nozzle body member. This limitation is also not addressed by the Office Actions. The hole 23 in Figure 1 is shown being smaller than the bore 29 in Figure 3. It is further observed that Figure 3 is at a smaller scale than Figure 1 which further highlights the size differential. Accordingly, Hinchman not only doesn't anticipate, but appears to teach away from the claimed construction.

Claim 6 depends from claim 1 and is believed to be allowable on the rationale as provided above and is also believed to be separately allowable on this separate basis. Allowance of claim 6 is respectfully requested.

#### **4. Rejection of Claim 7**

Claim 7 requires the additional limitation of legs extending longitudinally from the adjusting member spaced from the first orifice which assist in defining the by-pass passageway for the second position. This limitation is also not addressed by the Office Actions. Even if the “leakage theory” of Hinchman were to be accepted (which the applicant maintains is an incorrect interpretation of Hinchman), Hinchman does not teach legs assisting in defining a by-pass passageway. Not only does Hinchman not anticipate, but Hinchman appears to teach away from the claimed construction.

Claim 7 depends from claim 1 and is believed to be allowable on the rationale as provided above and is also believed to be separately allowable on this separate basis. Allowance of claim 7 is respectfully requested.

#### **5. Rejection of Claims 9 and 11**

Claim 9 requires the additional limitation of material of one of the conduit and body member to be harder than the other. This same additional limitation is discussed above with reference to claims 3 and 5. Hinchman does not appear to describe or suggest providing any difference in material construction of component parts.

Claim 9 depends from claim 8 and is believed to be allowable on the rationale as provided above and is also believed to be separately allowable on the basis articulated above in reference to claims 3 and 5. Allowance of claim 9 is respectfully requested.

Claim 11 depends from claim 9 and for purposes of this appeal, can stand or fall with claim 9.

#### **6. Rejection of Claim 12**

Claim 12 requires the additional limitation of legs extending longitudinally from the adjusting member spaced from the first orifice which assist in defining the by-pass passageway for the second position. This limitation is discussed above with reference to claim 7.

Claim 12 depends from claim 6 and is believed to be allowable on the rationale as provided above and is also believed to be separately allowable on the separate basis articulated above in relation to claim 7. Allowance of claim 12 is respectfully requested.

#### **7. Rejection of Claim 16**

Claim 16 depends from claim 14. Claim 14 was not rejected based on anticipation by Hinchman. Since claim 16 depends from a non-rejected claim, claim 16 is believed to be as allowable as the claim from which it depends on this separate basis since it was not rejected on this basis.

Allowance of claim 16 is respectfully requested.

#### **8. Rejection of Claims 17**

One of the limitations of claim 17 is a non-adjustable first restricted orifice which regulates flow in a first position and a by-pass passageway which allows additional gas flow in a second position.

This non-adjustable first restricted orifice was not discussed in the Final Office Action and is not disclosed or suggested in Hinchman. In fact, it is believed to be expressly taught against.

Allowance of claim 17 is respectfully requested on this basis.

**B. Obviousness Rejection of Claims 1, 3, 5-7, 9, 11, 12, 16 and 17**

**based on Ridenour in view of Ito**

**1. Rejection of Claim 1,6, 7 and 12**

Ridenour shows an adjustable gas nozzle which includes many features of the claimed invention. However, as acknowledged by the Examiner in the Office Action of October 25, 2007: “Ridenour differs from what is being claimed in the seal being distinct from the coupling.”

The Office Action states that it would have been obvious to have provided the seal of Ito to the device of Ridenour: “to prevent accidental removal of the nozzle body member.” Ito is a foam dispensing device that has no “bypass passageway”. Instead Ito discloses unscrewing outer cover **40** from the inner cover **20** to dispense foam from the jet nozzle **42**. Foam is generated by providing liquid from pipe **46** through mixing chamber **32** and out outlet **33** after mixing with air provided from air passage **26** through porous member **31** into the mixing chamber. Foam liquid passes through discharge port **25** and then out jet nozzle **42**.

Ito does provide an outer annular bulge **28** at an upper end of the inner cover out cylindrical portion **27**. Outer annular bulge **28** cooperates with the inner annular engaging bulge **45** so that the **requirement** “that outer cover **40** is prevented from inadvertently from the inner cover **20** in use and yet easily removed from the inner cover **20** by sliding the outer cover relative to the inner cover when desired” can be met (Col. 4, line 66- Col. 5, line 2). The Office Action simply equates the bulge **28** as a seal (which is not taught or suggested by Ito) and ignores the bulge’s function of cooperating with corresponding bulge **45**.

When this was expressly identified by way of response, the Office Action stated that “the fact that the applicant has recognized another advantage which would flow naturally from the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious.” (citation omitted). It is not believed that the applicant that has recognized another advantage, but instead, it appears that the Office Action has effectively disassembled half of an operational assembly of two required elements to perform the intended function of that reference of inadvertent removal and then argue that a portion of that assembly equates with the claimed structure without any teaching or suggestion in the reference that the identified structure can perform the limitation of the claim at issue. Quite simply, this is believed to be an improper obviousness rejection as there is no teaching or suggestion that bulge **28** forms a seal with an internal surface of the outer cover **40** in the two flow positions as claimed.

Instead of Ex parte Obiaya, the Applicant would propose that In re Ratti, 270 F.2d 810, 123 USPQ 349 (CCPA 1959) is directly on point. A discussion of this case can be found in MPEP 2143.01 under the section entitled: “THE PROPOSED MODIFICATION CANNOT CHANGE THE PRINCIPLE OF OPERATION.” Changing the principle of operation is believed to be EXACTLY what the proposed combination proffered by the Final Office action does to Ito. In short, the combination of Ito with Ridenour is not believed to teach or suggest the limitations of claim 1.

Allowance of claim 1 over this proposed combination is respectfully requested.

Claims 6 and 7 depend from claim 1 and for the purposes of this appeal, can stand or fall with claim 1. Claim 12 depends from claim 6 and for the purposes of this appeal, can stand or fall with claim 6.

## **2. Rejection of Claims 3, 5, 9 and 11.**

Claims 3 and 9 require the additional limitation of material of one of the conduit and body member to be harder than the other. This limitation is not addressed by the Office Actions. MPEP 2131.01 requires that in order to anticipate a claim, the reference must teach every element of the claim citing Verdegall Bros v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

The Examiner acknowledges that Ridenour does not have a seal and from re-reading the Ito reference, there is no disclosure or suggestion for providing “one of the conduit and body member to be harder than the other.” Accordingly, combining the two references cannot teach the limitation. Neither Ridenour, nor Ito, appear to describe any difference in material construction of the component parts. The Applicant, in the preferred embodiment described in paragraph [00015] on page 6 is pretty clear as to the advantage of such a construction which is not believed to be taught or suggested by Ridenour, Ito, nor their combination.

Claim 3 depends from claim 1 and is believed to be allowable on the rationale as provided above and is also believed to be separately allowable on this separate basis. Allowance of claim 3 is respectfully requested.

Claim 5 depends from claim 3 and can stand or fall with claim 3 for the purposes of this appeal.

Claim 9 depends from claim 7 and is believed to be allowable on the rationale as provided above and is also believed to be separately allowable on this separate basis. Allowance of claim 9 is respectfully requested.

Claim 11 depends from claim 9 and can stand or fall with claim 9 for the purposes of this appeal.

### **3. Rejection of Claim 16.**

Claim 16 depends from claim 14. Claim 14 was not rejected based on an obviousness rejection over Ridenour and Ito. Since claim 16 depends from a non-rejected claim on this basis, claim 16 is believed to be as allowable as the claim from which it depends is allowable on this separate basis.

Allowance of claim 16 is respectfully requested.

### **4. Rejection of Claim 17.**

Claim 17 is an independent claim. Claim 17 requires a seal distinct from the coupling which the Examiner observes is not present in Ridenour: “Ridenour differs from what is being claimed in the seal being distinct from the coupling.” Bulge 28 is cited as the element corresponding to the claimed seal.

The rationale for why this claim is not rendered obvious is the same as was argued above as it relates to claim 1.

Allowance of claim 17 is respectfully requested.

## **C. Obviousness Rejection of Claims 1, 3, 5-9, 11-14 and 16-20**

### **based on Ridenour in view of Hollinshead**

#### **1. Rejection of Claims 1, 3, 5-9, 11-14 and 16.**

Ridenour shows an adjustable gas nozzle which includes many features of the claimed invention. However, as acknowledged by the Examiner in the Office Action of October 25, 2007: “Ridenour differs from what is being claimed in the seal being distinct from the coupling.”

The Examiner states that it would have been obvious to have provided the seal ribs **104** of Hollinshead on the conduit **66** distinct from the coupling **84** to the device of Ridenour: “to improve the seal.”

The applicant has previously explained that in Hollinshead the identified fins are not between structure corresponding to the conduit and nozzle body member as claimed. Specifically, the claimed coupling **84** couples with a different structure than the fins contact. In response to showing that Hollinshead lacked the claimed structure, the Office Action responded: “One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references.” [Citations omitted].

In the applicant’s response, it was stated that: “There is no teaching to move parts from Hollinshead and make them function with the structure of Ridenour apart from the Applicant’s specification.” Moving “parts” in Hollinshead which do not meet the limitations of the claim into a specific location relative to the Ridenour reference utilizing the Applicant’s disclosure is not believed to be a proper *prima facie* case of obviousness.

The applicant believed this was pretty clear, but upon examining Hollinshead in further detail, it has been discovered since Applicant’s last response that the Hollinshead fins **104** are shown in detail in Figure 10 and don’t perform the function of providing a seal as claimed and interpreted by the Final Office Action. The fins of Hollinshead do not prevent the leakage of gas or even liquid as interpreted by the Office Action and as are required by the applicant as they do not circumvent the identified “conduit.” Fins **104** assist in biasing the shaft **52** against the shower pipe nut **40** (to help block the entry of



dirt, particles or other contaminants, Col. 5, lines 22-23) but don't provide a seal as claimed.

Allowance of claim 1 over this proposed combination is respectfully requested.

Claim 2-3, 5-9, 11-14 and 16 can stand or fall with claim 1 for the purposes of this appeal.

## **2. Rejection of Claims 17-20.**

Claim 17 is an independent claim. Claim 17 requires the coupling which the Examiner observes is not present in Ridenour: "Ridenour differs from what is being claimed in the seal being distinct from the coupling."

The Office Action states that it would have been obvious to have provided the seal ribs **104** of Hollinshead on the conduit **66** distinct from the coupling **84** to the device of Ridenour: "to improve the seal."

The Applicant disagrees for the rationale provided above as it relates to claim 1. Fin **104** is not a seal and it performs no sealing function. Figure 10 of Hollinshead clearly identifies a representative fin **104**. Allowance of claim 17 over this proposed combination is respectfully requested.

Claim 18-20 can stand or fall with claim 1 for the purposes of this appeal.

## **III. CONCLUSION**

Claims 1-3, 5-9, 11-14 and 16-20 are not believed to be anticipated or obvious over the cited references for the rationale provided in this brief. Allowance of claims 1-3, 5-9, 11-14 and 16-20 is respectfully requested.

Respectfully submitted,

MILLER & MARTIN PLLC

A large, stylized handwritten signature in black ink, appearing to read 'S. Stark', is written over the text of the signature block.


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## CERTIFICATE OF MAILING

I hereby certify that the preceding Appeal Brief on Appeal is being deposited with the United States Postal Service as first class mail in an envelope addressed to:

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On this 21<sup>st</sup> day of February, 2008.

  
Beverly L. Middleton

## APPENDIX A

1. An adjustable gas nozzle comprising, in combination:
  - a nozzle body member having an elongated passageway therethrough with an inlet opening at a first end and an outlet at a second end;
  - a conduit connected to the nozzle body member;
  - an adjusting member disposed intermediate the conduit and the nozzle body member and having a first end with a first restricted orifice disposed proximate to the second end of the nozzle body member, and a second end having a second orifice, said first and second ends having a first passageway intermediate thereto providing fluid communication intermediate the first restricted orifice and the second orifice;
  - a coupling between said conduit and said nozzle body member to permit first and second alternative positions therebetween;
  - a by-pass passageway around the first passageway of the adjusting member and said first restricted orifice;
  - cooperative surfaces in said first position to seal between said body member and said adjusting member to close off flow through said by-pass passageway to permit a first gas flow through the first restricted orifice and second orifice in series so that gas flow rate is regulated by said first restricted orifice;
  - cooperating means associated with said adjusting member and said conduit upstream of said cooperating surfaces for limiting the displacement of said nozzle body member relative to said conduit in said first position;
  - said nozzle body member being moveable into said second position relative to said conduit to relieve the seal between the said body member and said adjusting member

to permit a second gas flow of an amount greater than said first gas flow through the combination of said first restricted orifice and said by-pass passageway wherein flow through the by-pass passageway does not flow through the first passageway; and

a seal distinct of the coupling provided between said conduit and said nozzle body member and integral to the conduit precluding leakage of gas therebetween in both the first and second positions.

2. An adjustable gas nozzle as recited in claim 1, wherein said seal comprises ribs on said conduit.

3. An adjustable gas nozzle as recited in claim 1, wherein the material of one of said conduit and body member is harder than the other.

4. Cancelled

5. An adjustable gas nozzle as recited in claim 3, wherein the seal is located intermediate the coupling and the outlet of the nozzle body member.

6. An adjustable gas nozzle as recited in claim 1, wherein said restricted orifices and said outlet are coaxial, and said first restricted orifice is smaller than the outlet of said nozzle body member.

7. An adjustable gas nozzle as recited in claim 1, wherein said cooperating means includes an annular shoulder about an anterior wall of said conduit; and
- a plurality of legs elongated longitudinally along the adjusting member spaced longitudinally from the first restricted orifice of said adjusting member and positionable on said annular shoulder, the space between adjacent legs providing the by-pass passageway for gas flow therebetween when said cooperative surfaces are not engaged.
8. An adjustable gas nozzle as recited in claim 7, wherein said seal comprises ribs on the conduit.
9. An adjustable gas nozzle as recited in claim 7, wherein the material of one of said conduit and body member is harder than the other.
10. Cancelled
11. An adjustable gas nozzle as recited in claim 9, wherein the seal is located intermediate the coupling and the outlet of the nozzle body member.
12. An adjustable gas nozzle as recited in claim 6, wherein said cooperating means includes an annular shoulder about an anterior wall of said conduit; and
- a plurality of legs elongated longitudinally along the adjusting member spaced longitudinally from the outlet of said adjusting member and positionable on said

shoulder, the space between adjacent legs providing a passageway for gas flow therebetween when said cooperative surfaces are not engaged.

13. An adjustable gas nozzle as recited in claim 12, wherein said seal comprises ribs on the conduit.

14. An adjustable gas nozzle as recited in claim 13, wherein the material of one of said conduit and body member is harder than the other.

15. Cancelled

16. An adjustable gas nozzle as recited in claim 14, wherein the seal is located intermediate the coupling and the outlet of the nozzle body member.

17. An adjustable gas nozzle comprising, in combination:

- a nozzle body member having an elongated passageway therethrough with an inlet opening at a first end and an outlet at a second end;
- a conduit connected to the nozzle body member;
- an adjustment member disposed intermediate the conduit and the nozzle body member and having a first non-adjustable restricted orifice at the end of the adjustment member proximate to the second end of the nozzle body member;
- a coupling between said conduit and said body member to permit first and second alternative positions therebetween;

a by-pass passageway around the adjusting member and said first restricted orifice;

cooperative surfaces in said first position to seal between said body member and said adjusting member to close off flow through said by-pass passageway to permit a first gas flow through the first restricted orifice so that gas flow rate is regulated by said first restricted orifice;

cooperating means associated with said adjusting member and said conduit upstream of said cooperating surfaces for limiting the displacement of said nozzle body member relative to said conduit in said first position;

said nozzle body member being moveable into said second position relative to said conduit to relieve the seal between the said body member and said adjusting member to permit a second gas flow of an amount greater than said first gas flow through the combination of said first restricted orifice and said by-pass passageway; and

an integral seal distinct from the coupling provided between said conduit and said nozzle body member to preclude leakage of gas therebetween in both the first and second positions.

18. An adjustable gas nozzle as recited in claim 17, wherein said seal comprises ribs on said conduit.

19. An adjustable gas nozzle as recited in claim 18, wherein the material of one of said conduit and body member is harder than the other.



20. An adjustable gas nozzle as recited in claim 19, wherein said conduit has an end and said seal is disposed intermediate the coupling and the end of the conduit.

## **APPENDIX B: EVIDENCE APPENDIX**

None

## **APPENDIX C: BOARD DECISION APPENDIX**

None